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R-4269

REMARKS

In the Non-Final Office Action mailed on October 3, 2003, the Examiner reviewed claims 1-10. The Examiner rejected claims 1-5 under 35 U.S.C. §102(b) as being anticipated by *Byron*. In addition, the Examiner rejected claims 1-2 and 6-10 under 35 U.S.C. §103(a) as being unpatentable over *Prast, et al.* and *Nakai, et al.*. Applicant has amended claim 1, as well as claim 4, of the original claims. In addition, Applicant has added new claims 21-30. Applicant believes these claims stand in condition for allowance.

Claim 1 now requires "wherein the first locality is displaced from the second locality along the axis of the optical fiber." This feature distinguishes the present invention from *Byron* as well as a combination of *Prast, et al.* and *Nakai, et al.*. *Byron* teaches the focusing of "light into a line extending substantially along the axis of the fibre **10**." [*Byron*, column 1, ll 57-58]. This light, "ultra-violet light 11" is shined onto "a phase grating 13 which interacts with the incident light to form a fringe pattern of the light in the optical core of the optical fibre **10**." [*Byron*, column 1, ll 59-61]. During the creation of the Bragg grating by this light, the optical fiber is heated in the same region by "a beam of radiation **14**" and possibly by another "beam of radiation 24,...,focused by cylindrical lens 25 to a line focus extending along the core of the fiber 10." [*Byron*, ll 65-67, column 2, ll 15-19]. Accordingly, all three beams fall incident on fiber 10 in the same locality. They are not axially displaced from one another. Accordingly, *Byron* does not disclose the first locality displaced axially from the second locality. Therefore, claim 1 and its dependents, claims 2-10, stand in condition for allowance.

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In addition, claim 2 requires "wherein the first laser beam comprises the second laser beam." There is no showing in *Byron* that any of the beams come from the same source. Therefore, this claim is in condition for allowance for this additional reason.

Claim 4 now requires, "the step of deforming the optical fiber about the first locality and the second locality to form the grating on the optical fiber." There is no teaching in *Byron* that discloses this feature. Instead, there is only one beam, i.e., "ultraviolet-light 11," that forms the grating. There is no teaching that either "beam of radiation 14" or "beam of radiation 24" deform the optical fiber to form the grating on the optical fiber. Accordingly, claim 4 is in condition for allowance for this reason as well.

The Examiner further rejected claims 1-2 and 6-10 under 35 U.S.C. §103(a) as being unpatentable over *Prast, et al.* and *Nakai, et al.*. Neither *Prast, et al.* nor *Nakai, et al.* alone or in combination teach all the limitations of newly amended claim 1. Indeed, there is no teaching within either of these references of the creation of a grating on an optical fiber by directing a first laser beam on a first locality and directing the second laser beam on a second locality, the two localities both circumferentially displaced and axially displaced from each other. *Prast, et al.* does not show two localities axially displaced from each other. Moreover, *Nakai, et al.* fails to do so as well. Instead, the grating of *Nakai, et al.* is formed by using a solitary source of light, i.e., "UV beam 2" which is directed over "mask 3." Accordingly, there is no teaching of multiple beams that are both circumferentially and axially displaced from each other.

The Examiner contends that the combination of *Prast, et al.* and *Nakai, et al.* is proper because "it would have been obvious to use the *Prast, et al.* fiber to create the *Nakai, et al.* gratings so that one can precisely control the central wave length and

rejection of the light used in optical systems...and/or to sell them and make money." [Non-Final Office Action (10-03-03) p. 4]. This so-called motivation is deficient in explaining why one with the teachings of *Prast, et al.* would look to *Nakai, et al.* for the teaching of forming a grating. There is nothing within *Prast, et al.* that suggests or provides motivation for the formation of the grating of *Nakai, et al.* Accordingly, the combination is improper. Claims 1-2 and 6-10 are accordingly allowable for this additional reason.

Claim 4 further requires "the step of deforming the optical fiber about the first locality and the second locality." Again, this feature is not taught by either *Nakai, et al.* or *Prast, et al.* Accordingly, this claim is in condition for allowance for this additional reason.

Claim 7 requires "wherein at least one of the laser beams traces at least in part a scanning pattern." The Examiner contends that these references disclose "a cross, a square, an open "T" and triangles." Applicant would appreciate the Examiner identifying these particular patterns. From Applicant's reading of these references, there is no such disclose of any scanning pattern. Therefore, claim 7 is in condition for allowance.

Claim 8 requires "a laser source activated at predetermined points of the scanning pattern." The Examiner contends that this is taught by the foregoing cited references. However, there is nothing within either reference that teaches the activation of the laser source at predetermined points of the scanning pattern. Accordingly, claim 8 is in condition for allowance for this additional reason.

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In addition, Applicant has added new claims 21-30. The foregoing references do not teach all of the limitations of these claims. Therefore, these claims are in condition for allowance.

Claim 21 depends upon claim 1, which is allowable. Claim 21 also requires "wherein the first laser beam and the second laser beam form a bend in the optical fiber." There is no teaching of the formation of any bend by the foregoing references. Therefore, claim 21 is in condition for allowance.

Claim 22 depends upon claim 21, which is ultimately dependent upon claim 1. Because claim 1 is in condition for allowance, claim 22 is also in condition for allowance. In addition, claim 22 requires "the first locality is a portion of the bend apart from the second locality." Again, there is no teaching in any of the references of this limitation. Therefore, claim 22 is in condition for allowance.

Claim 23 requires "wherein steps A) and B) are repeated so that the first locality is axially displaced from the second locality at regular intervals." This limitation is not taught by the foregoing references. Therefore, claim 23 is in condition for allowance for this additional reason.

Claim 24 depends upon claim 4, which is allowable for the reasons set forth above. In addition, claim 24 requires "changing an index of refraction of the optical fiber." This feature is not taught by the foregoing references. Therefore, claim 24 is in condition for allowance.

Claim 25 requires "wherein deforming comprises forming a bend in the optical fiber." Again, nothing within the foregoing references teaches a bend in the optical fiber. Therefore, claim 25 is in condition for allowance.

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Independent claim 26 requires in pertinent part, "deforming the optical fiber about the first locality through the first laser beam" and "deforming the optical fiber about the second locality through the second laser beam." Claim 26 further requires "forming a grating on the optical fiber through steps C) and D)." These limitations are not taught by the foregoing references. Therefore, claim 26 is in condition for allowance.

Claim 27 depends upon claim 26 and is allowable for this reason. Also, claim 27 requires, "wherein deforming comprises forming bends in the optical fiber." This feature is not taught by the foregoing references. Therefore, claim 27 is in condition for allowance for this additional reason.

Claim 28 depends upon claim 26. In addition, claim 28 requires "wherein deforming comprises altering an index of refraction of the optical fiber." Again, there is nothing within the foregoing references that teaches deforming the optical fiber using two laser beams to form bends. Therefore, this claim is in condition for allowance. Claim 28 depends upon claim 26. Accordingly, claim 28 is in condition for allowance. Claim 28 further requires, "wherein deforming comprises altering an index of refraction of the optical fiber." This feature is not taught by the foregoing references. Therefore, claim 28 is in condition for allowance.

Claim 29 also depends upon claim 26. Claim 29 requires, "wherein the first locality and the second locality are spaced from each other along an axis of the optical fiber." For much the same reason that claim 1 is in condition for allowance, so too is claim 29.

Finally, new claim 30 depends upon claim 26 and is allowable for this reason. In addition, claim 30 requires "wherein steps A) - D) are repeated to deform the optical fiber

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at regular intervals. This feature is not taught by the foregoing reference. Therefore, claim 30 is in condition for allowance.

Applicant believes that additional fees in the amount of $266.00 is required for ten claims in excess of twenty and one additional independent claim. The Commissioner is authorized to charge Deposit Account No. 50-1482 in the name of Carlson, Gaskey & Olds in the amount of $266.00. The Commissioner is authorized to charge Deposit Account No. 50-1482 in the name of Carlson, Gaskey & Olds for any additional fees or credit the account for any overpayment.

Respectfully submitted,

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CERTIFICATE OF FACSIMILE

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office (Fax No. (703) 872-9306) on January 5, 2004.

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